Abstract

West Banko Pit 3 coal mine is one of many coal mine site that managed by PT. Bukit Asam (Persero) Tbk. On the research area West Banko Pit 3 there is unused mine slope that not been worked anymore because there is no new contract yet, but still there are a coal layer beneath that area. Based on that, now appear inisiatif to continue the mining activity on that area.

Slope stability analysis in this research is use a limit equilibrium methode and calculate using software Slope W version 6.02. Rock strenght properties is fully taken from rock mechanical laboratory in PT. Bukit Asam (Persero) Tbk. The minimum factor of safety that recomend by PTBA is $\geq$1,1 for single slope analysis dan $\geq$1,2 for overall slope analysis.

Evaluation on that unused mine slope is working on three section. The result from slope stability analysis on that three section which is Rv1, Rv2 and Rv3 have differently factor of safety. Rv1 have factor of safety 1,32. Rv2 have factor of safety 2,23 and Rv3 have factor of safety 2,49. From that all three section that have been analized, three of it have factor of safety above 1,2. Thus that all section is can be optimalized. An optimal single slope design that joined to be an overall slope is slope with 8 meter height and 1 : 2 in geometry design for top soil layer. And slope with 9 meter height and 1 : 1 in geometry design for overburden, interburden A1 – A2, interburden A2 – B1 layer.

From many selected optimal single slope, they will be joined to be an overall with 10 meter in bench width for all three section. On Rv1 section factor of safety is 1,21. Rv2 have factor of safety 1,38. Rv3 have factor of safety 1,31. From that results, on Rv2 and Rv3 have factor of safety way above the minimum factor of safety for overall slope analysis. So then, the bench width in section Rv2 and Rv3 is decrease to 8 meter. From this action, the factor of safety on Rv2 become 1,22 and on Rv3 the factor of safety become 1,24.